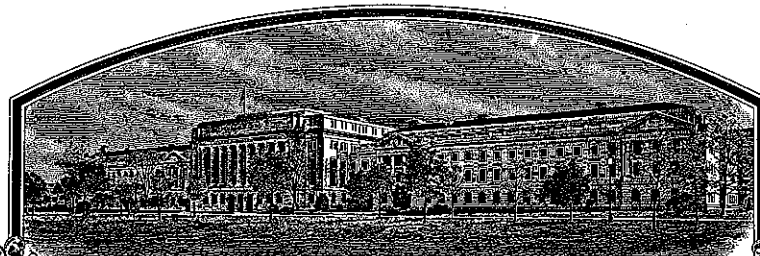


No.

200600056



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Archer-Daniels-Midland Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR REPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BEAN, FIELD

'Seabiskit'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this seventh day of December, in the year two thousand and seven.

Attest:

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <b>Archer-Daniels-Midland Company</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME <b>N128420</b>		3. VARIETY NAME <b>Seabiskit</b>	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <b>4666 East Faries Parkway Decatur, IL 62526</b>		5. TELEPHONE (include area code) <b>(217) 451-2777</b>		<b>FOR OFFICIAL USE ONLY</b> PVPO NUMBER <b>200600056</b> FILING DATE <b>JANUARY 6, 2006</b>	
		6. FAX (include area code) <b>(217) 424-6196</b>			
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <b>Corporation</b>		8. IF INCORPORATED, GIVE STATE OF INCORPORATION <b>DE</b>		9. DATE OF INCORPORATION <b>May 2, 1923</b>	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) <b>Andrew F. Nilles Corporate Counsel/Registered Patent Attorney Archer-Daniels-Midland Company 4666 East Faries Parkway Decatur, IL 62526</b>					
11. TELEPHONE (include area code) <b>(217) 451-2777</b>		12. FAX (include area code) <b>(217) 424-6196</b>		FILING AND EXAMINATION FEES: <b>\$4,382.00</b> DATE <b>1/6/06</b> CERTIFICATION FEE: <b>\$768.00</b> DATE <b>10/1/07</b>	
13. E-MAIL <b>andrew_nilles@admworld.com</b>		18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.			
14. CROP KIND (Common Name) <b>Navy Bean</b>		16. FAMILY NAME (Botanical) <b>Leguminosae</b>		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If "no", go to item 23)	
15. GENUS AND SPECIES NAME OF CROP <b>Phaseolus vulgaris</b>		17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$3,652), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)			
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)			
25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF OWNER <b>David J. Smith</b>		SIGNATURE OF OWNER			
NAME (Please print or type) <b>David J. Smith</b>		NAME (Please print or type)			
CAPACITY OR TITLE <b>Sr. VP, Secretary and General Counsel</b>		DATE <b>1-5-06</b>		CAPACITY OR TITLE <b></b>	
				DATE <b></b>	

(See reverse for instructions and information collection burden statement)

## INSTRUCTIONS

200600056

**GENERAL:** To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$3,652 (\$432 filing fee and \$3,220 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvpindex.htm>

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 <http://www.ams.usda.gov/lsg/seed.htm>.

## ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;  
(2) the details of subsequent stages of selection and multiplication;  
(3) evidence of uniformity and stability; and  
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:  
(1) identify these varieties and state all differences objectively;  
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and  
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

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**22. CONTINUED FROM FRONT** (Please provide a statement as to the limitation and sequence of generations that may be certified.)

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**23. CONTINUED FROM FRONT** (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

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**24. CONTINUED FROM FRONT** (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

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**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

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Exhibit A: Origin and Breeding History of the Variety

Statement of Uniformity and Stability

Observations in seed-increase during the 3 years of 2004, 2005 and 2006 at the F11, F12 and F13 generations of self pollination indicate that Seabiskit is uniform and stable. No variants were observed. Off-types at a percentage less than one can occur for almost any characteristic. Selection criteria for each generation included removal of off-types for plant architecture and maturity in the field before harvesting. Off-types for seed shape, color or size were removed on the mill line. Therefore, a low level of off-types during seed multiplication was considered to be within commercially acceptable limits.

Seabiskit is an F2-derived variety developed using the modified pedigree method of plant breeding from a cross between the navy bean varieties Crestwood and Rogers 331.

1999 In the cycle 1 winter greenhouse, Crestwood was crossed to Rogers-331 to generate F1 seeds. The F1 seeds were planted in the cycle 2 winter greenhouse to give F1 plants that were similar to each other. F2 seed was harvested from these plants and showed no phenotypic differences.

2000 F2 seeds were planted in the field in 10-ft rows with 4 inch spacing at Caldwell, Idaho. At 100 days after planting and before harvesting of single plants, individual plants having at least 15 pods per plant that held their pods off of the ground (PC = pod clearance) were selected. The F2:3 seed from these single plants were planted in progeny rows in Chile.

2001 F2:4 seed harvested in Chile was planted in Idaho. Rows were selected for seedling vigor, robustness of plants, at least 90% pod clearance and grain yield. F2:4 seed from Chile of the same lines was also planted in North Dakota breeder nurseries and selected for maturity, lack of symptoms for natural infections by common bacterial blight, bean rust, anthracnose, tolerance to white mold, and grain yield. F2:5 seed from Idaho plots was harvested and planted in Chile.

2002 F2:6 harvested in Chile was planted in replicated trials in Idaho and North Dakota. The F2:6 was selected for absence of disease symptoms, plant architecture, maturity and grain yield. F2:7 seed was harvested in Idaho and planted in Chile.

2003 F2:8 seed harvested in Chile was planted in replicated trials in Idaho, Wyoming, Michigan and North Dakota. The F2:8 seed was selected for absence of disease symptoms, plant architecture, maturity, canning quality and grain yield. Enough F2:9 seed was harvested in Idaho and planted in Chile to produce 100 lbs of N128420.

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2004      The F10 winter seed increase was planted in Powell, Wyoming for a 1 acre increase. Selection included removing plants that showed non-uniform flower color, plant height, maturity and branch angle. The harvested F11 seed is the breeder seed lot. N128420 was planted in replicated trials in Idaho, Wyoming, Michigan and North Dakota. N128420 seed was selected for absence of disease symptoms, plant architecture, maturity, canning quality and grain yield.

2005      F12 seed of N128420 was planted in replicated trials in Idaho, Wyoming, Michigan and North Dakota. The F12 seed was selected for absence of disease symptoms, plant architecture, maturity, canning quality and grain yield.

2006      Continued testing of F2-derived F13 seed at multiple locations and available for sale.

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Exhibit B: Statement of Distinctness

Seabiskit most closely resembles the Seahawk navy bean variety.

Seabiskit has significantly smaller seed size than Seahawk. Seed size is measured as the weight in grams (g) of 100 seeds adjusted to 12 % moisture. Data on seed size (g/100) below was collected over two years (2005, 2006) at 21 environments. The term environment is used instead of location / years, because 2 environments were imposed by the University of Idaho at the Parma location in each year. One replicated trial was conducted with optimum irrigation. A second replicated trial was conducted with restricted irrigation causing imposed drought conditions. All data is from the work of the Cooperative Dry Bean Nursery managed by the USDA-ARS in Pullman WA (Dr. An Hang). Data shown is the average seed weight of 100 seeds from each replicate from each environment. N128420 (Seabiskit) averaged 17.5 g / 100 seeds over the 21 environments, whereas Seahawk averaged 22.1 g / 100 seeds. A paired T-Test conducted on this data confirms that the difference in average values for N128420 (Seabiskit) and Seahawk is significant.

<b>Year</b>	<b>Environment</b>	<b>Seabiskit (N128420) g/100 seeds</b>	<b>Seahawk g/100 seeds</b>
2005	Davis, CA	18.1	25.0
2005	Ft Collins, CO	16.9	20.1
2005	Parma, ID	18.0	24.0
2005	Drought-Parma, ID	17.0	22.0
2005	Saginaw, MI	18.8	22.2
2005	Sidney, MT	19.2	23.6
2005	Scottsbluff, NE	16.5	22.4
2005	Prosper, ND	14.2	17.8
2005	Freeville, NY	16.5	20.4
2005	Othello, WA	16.9	23.1
2005	Torrington, WY	15.9	22.3
2006	Ft Collins, CO	17.6	21.4
2006	Parma, ID	19.0	25.0
2006	Drought-Parma, ID	18.0	24.0
2006	Saginaw, MI	17.7	21.1
2006	Sidney, MT	18.7	21.5
2006	Hatton, ND	14.2	20.4
2006	Freeville, NY	17.1	22.1
2006	Elora, Ontario	19.5	21.7
2006	Othello, WA	17.1	20.6
2006	Powell, WY	19.6	22.8
<b>Mean</b>		<b>17.5</b>	<b>22.1</b>
<b>Paired T Test</b>			<b>t-statistic = -14.84</b>
<b>(Probability of T &lt;= t)</b>			<b>0.000,000,000,001,471</b>

OBJECTIVE DESCRIPTION OF VARIETY  
Dry Edible Bean (*Phaseolus vulgaris* L.)

NAME OF APPLICANT(S) <u>Archer-Daniels-Midland Company</u>	EXPERIMENTAL NAME <u>N128420</u>	VARIETY NAME <u>Seabiskit</u>
ADDRESS (Street and No. or R.F.D. No., City, State, ZIP) <u>4666 East Faries Parkway</u> <u>Decatur, IL 62526</u>		FOR OFFICIAL USE ONLY PVPO NO. <u>200600056</u>

Provide data for all characters unless indicated as "optional." Place numbers in the boxes for the characters or numerical values which best describe this variety. Measured data should be the mean of an appropriate number of well spaced (15-20 cm) plants. The Royal Horticulture Society or any recognized color standard may be used to determine plant color. Designate the color system used below.

COLOR SYSTEM USED	LOCATION OF THE TEST(S) TO EVALUATE THIS VARIETY <u>Caldwell, Idaho</u>	<u>MAH 8/24/07</u>
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1. MARKET CLASS	2. MATURITY
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<div> <div>12</div> <div>CLASS</div> <div> 1 - Navy (Pea) 2 - Small White 3 - Black 4 - Pinto 5 - Great Northern 6 - Small Red 7 - Pink 8 - Cranberry 9 - Dark Red Kidney 10 - Light Red Kidney 11 - Yellow Eye 12 - Other (specify) <u>Vista</u> </div> </div> <div> <div>CHECK</div> <div> Seafarer Aurora Midnight UI-114 UI-S9 NW-59 Vista UI-50 Montcalm Redtkoud Steuben </div> </div>	<div> <div>2</div> <div>1 = Early (80-90 days); 2 = Medium (90-100 days); 3 = Late (&gt;100 days)</div> </div> <div> <div>095</div> <div>Days from planting to harvest maturity</div> </div> <div> <div> <div> <div></div> <div></div> <div></div> </div> <div>Heat units from planting to harvest maturity (optional). Specify base temperature used: _____</div> </div> <div> <div>100</div> <div>Days from planting to harvest maturity of check variety (use check appropriate to market class shown in item 1)</div> </div> </div>
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3. PLANT HABIT	<div> <div>4</div> <div>TYPE</div> <div> 1 = Ia Bush-determinate, strong and erect stem and branches 2 = Ib Bush-determinate, weak stem and branches 3 = IIa Erect growth habit-indeterminate, guides (runners) short or not developed 4 = IIb Erect growth habit-indeterminate, guides medium to long, with no ability to climb 5 = IIIa Vine-indeterminate, short guides with no ability to climb 6 = IIIb Vine-indeterminate, long guides with ability to climb 7 = IVa Indeterminate climbing, pods distributed throughout the plant 8 = IVb Indeterminate climbing, pods concentrated on the upper part of the plant </div> </div> <div> <div>31</div> <div>Average height of mature plant, in cm.</div> </div> <div> <div>34</div> <div>Average height of check variety, in cm. (use same check as above)</div> </div> <div> <div>3</div> <div>Pod Position: 1 = Low (lower pods touching soil surface) 2 = High (lower pods not touching soil surface) 3 = Scattered (not concentrated high or low)</div> </div> <div> <div>1</div> <div>Adaptability to machine harvest: 1 = Adapted 2 = Not Adapted</div> </div> <div> <div>2</div> <div>Lodging resistance: 1 = Good 2 = Fair 3 = Poor</div> </div>
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4. LEAFLET MORPHOLOGY (Use terminal leaflet of a fully expanded trifoliate)
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<div> <div>1</div> <div>1 = Smooth; 2 = Wrinkled</div> </div> <div> <div>1</div> <div>1 = Dull; 2 = Glossy; 3 = Semiglossy; 4 = Variable</div> </div>	<div> <div>1</div> <div>SHAPE:</div> <div> 1 = Ovate 2 = Lanceolate 3 = Deltoid 4 = Cordate 5 = Rhomboid </div> </div> <div> <div>2</div> <div>APEX OF LEAFLET:</div> <div> 1 = Acute 2 = Acuminate 3 = Cuspidate 4 = Obtuse </div> </div> <div> <div>1</div> <div>BASE OF LEAFLET:</div> <div> 1 = Obtuse 2 = Oblique 3 = Cordate 4 = Cuneate 5 = Attenuate </div> </div>
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## 5. FLOWER COLOR AND DAYS TO BLOOM

1 COLOR OF STANDARD: 1 = White; 2 = Cream; 3 = Pink;  
4 = Blue; 5 = Purple

1 COLOR OF KEEL: 1 = White; 2 = Cream; 3 = Pink;  
4 = Blue; 5 = Purple

1 COLOR OF WINGS: 1 = White; 2 = Cream; 3 = Pink;  
4 = Blue; 5 = Purple

5 9 Days to 50% bloom

## 6. POD MORPHOLOGY (Green pod morphology optional)

Green Mature

1 1 COLOR PATTERN: 1 = Solid; 2 = Striped; 3 = Blotched; 4 = Mottled; 5 = Other \_\_\_\_\_

3 4 PRIMARY COLOR: 1 = Purple; 2 = Red; 3 = Green; 4 = Yellow; 5 = Tan; 6 = Brown; 7 = Other \_\_\_\_\_

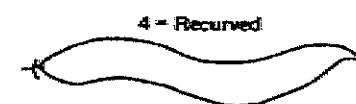
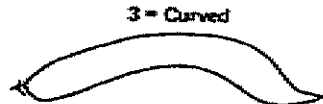
3 3 COLOR MODIFIER: 1 = Light; 2 = Light Medium; 3 = Medium; 4 = Medium Dark; 5 = Dark

SECONDARY COLOR: 1 = Purple; 2 = Red; 3 = Green; 4 = Yellow; 5 = Tan; 6 = Brown; 7 = Other \_\_\_\_\_

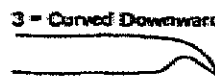
3 3 CROSS SECTION SHAPE: 1 = Flat 2 = Pear 3 = Round 4 = Figure Eight



1 1 POD CURVATURE: 1 = Straight 2 = Slightly Curved  
3 = Curved 4 = Recurved



1 1 POD BEAK ORIENTATION: 1 = Straight 2 = Curved Upward 3 = Curved Downward 4 = Variable  
Average beak length, in cm. \_\_\_\_\_



1 2 CONSTRICTIONS: 1 = None; 2 = Slight; 3 = Deep

6 6 Average number of seeds per pod

## 7. SEED COLOR

2 1 = Shiny; 2 = Dull; 3 = Semishiny; 4 = Variable

1 1 = Monochrome; 2 = Polychrome

1 PRIMARY COLOR: 1 = White; 2 = Yellow; 3 = Buff; 4 = Tan;  
5 = Brown; 6 = Pink; 7 = Red; 8 = Purple;  
9 = Blue; 10 = Black; 11 = Other \_\_\_\_\_

1 SECONDARY COLOR: 1 = White; 2 = Yellow; 3 = Buff; 4 = Tan;  
5 = Brown; 6 = Pink; 7 = Red; 8 = Purple;  
9 = Blue; 10 = Black; 11 = Other \_\_\_\_\_

1 COLOR PATTERN: 1 = Solid; 2 = Splashed; 3 = Mottled;  
4 = Striped; 5 = Flecked; 6 = Dotted

2 HILAR RING: 1 = Absent; 2 = Present

1 HILAR RING COLOR: 1 = White; 2 = Yellow; 3 = Buff; 4 = Tan; 5 = Brown; 6 = Pink; 7 = Red;  
8 = Purple; 9 = Blue; 10 = Black; 11 = Other \_\_\_\_\_

## 8. SEED SHAPE AND WEIGHT

2 SHAPE OF SEED TAKEN FROM MIDDLE OF POD: 1 = Round 2 = Oval 3 = Cuboid 4 = Kidney 5 = Truncate  
Fastigiate



2 2 Dry seed weight in g/100g seeds (adjusted to 12% moisture)



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## 9. ANTHOCYANIN PIGMENTATION

1 = ABSENT  
2 = PRESENT☒ Flowers  
☒ Leaves☒ Stems  
☒ Petioles☒ Roots  
☒ Peduncles☒ Seeds  
☒ Nodes

## 10. KNOWN DISEASE REACTION

DISEASES - COMMON NAME: Anthracnose, Rust, Powdery mildew, Fusarium root rot, Pythium root rot, Rhizoctonia root rot, Pythium wilt, Sclerotinia white mold, Angular leaf spot, Bacterial wilt, Halo blight, Fuscos blight, Common bacterial blight, Red node virus, Pod mottle virus, Bean common mosaic virus, Bean yellow mosaic virus, Curly top virus, Bacterial brown spot, Bean southern mosaic virus, Other (specify) \_\_\_\_\_

REACTION: 1 = Susceptible; 2 = Resistant; 3 = Tolerant; 4 = Avoidance

(Give the common name (CN), scientific name (SN), and race(s), where applicable)

☒ DISEASE: CN white mold; SN sclerotinia sclerotiorum; Race(s) \_\_\_\_\_☐ DISEASE: CN \_\_\_\_\_; SN \_\_\_\_\_; Race(s) \_\_\_\_\_☐ DISEASE: CN \_\_\_\_\_; SN \_\_\_\_\_; Race(s) \_\_\_\_\_☐ DISEASE: CN \_\_\_\_\_; SN \_\_\_\_\_; Race(s) \_\_\_\_\_☐ DISEASE: CN \_\_\_\_\_; SN \_\_\_\_\_; Race(s) \_\_\_\_\_☐ DISEASE: CN \_\_\_\_\_; SN \_\_\_\_\_; Race(s) \_\_\_\_\_

## 11. KNOWN INSECT/NEMATODE RESISTANCE

PESTS - COMMON NAME: Aphids, Bean pod weevil, Bruchid beetle, Corn earworm, Flea beetle, Leaf hopper, Lesion nematode, Lygus, Mexican bean beetle, Root knot nematode, Corn seed maggot, Spider mites, Thrips, Weevils, Western bean cutworm, Other (specify) \_\_\_\_\_

REACTION: 1 = Susceptible; 2 = Resistant; 3 = Tolerant; 4 = Avoidance

(Give the common name (CN), scientific name (SN), and biotype, where applicable)

☐ PEST: CN \_\_\_\_\_; SN \_\_\_\_\_; Biotype \_\_\_\_\_☐ PEST: CN \_\_\_\_\_; SN \_\_\_\_\_; Biotype \_\_\_\_\_☐ PEST: CN \_\_\_\_\_; SN \_\_\_\_\_; Biotype \_\_\_\_\_

## 12. KNOWN PHYSIOLOGICAL STRESS REACTION

1 = Susceptible; 2 = Resistant;  
3 = Tolerant; 4 = Avoidance☐ Heat☐ Cold☒ Drought☐ Air Pollution

Nutrient toxicity or deficiency (specify nutrient) \_\_\_\_\_

Other \_\_\_\_\_

## 13. COMMENTS

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Exhibit D: Additional Description of the Variety

Additional data from the Cooperative Dry Bean Nursery show that N128420 (Seabiskit) has a high rate of seed fill, high biomass yield and yield stability under imposed drought.

Rate of Seed Filling

Rate of seed filling (lb per acre per day), a physiological component of yield, is calculated by dividing the grain yield in lbs/acre by maturity in days after planting (D.H. Wallace et al. 1993. Improving Efficiency of Breeding for Higher Crop Yield. Theoretical and Applied Genetics 86: 27-40). Experimental lines with improved rates of seed fill should also demonstrate improved yield.

N128420 (Seabiskit) has a higher rate of seed filling than Seahawk. Data on seed size (g/100) below was collected over two years (2005, 2006) at 16 environments. The term environment is used instead of location / years, because 2 environments were imposed by the University of Idaho at the Parma location in each year. One replicated trial was conducted with optimum irrigation. A second replicated trial was conducted with restricted irrigation causing imposed drought.. All data is from the work of the Cooperative Dry Bean Nursery managed by the USDA-ARS in Pullman WA (Dr. An Hang). Rate data shown is the average seed yield (lbs/acre) from each environment divided by the maturity rating at each environment . N128420 (Seabiskit) averaged 26.8 lbs /acre/day over the 16 environments, whereas Seahawk averaged 25.1 lbs /acre/day. A paired T-Test conducted on this data confirms that the difference in average values for N128420 (Seabiskit) and Seahawk is significant.

Year	Environment	N128420 (SEABISKIT) Lb / acre / day	SEAHAWK Lb / acre / day
2006	Ft Collins, CO	13.9	10.6
2006	Parma, ID	24.7	17.4
2006	Drought-Parma, ID	12.9	8.6
2006	Saginaw, MI	30.3	30.7
2006	Hatton, ND	23.9	18.2
2006	Freeville, NY	28.8	29.2
2006	Elora, Ontario	21.2	22.8
2006	Othello, WA	29.1	27.1
2006	Powell, WY	43.8	38.7
2005	Ft Collins, CO	19.9	15.0
2005	Saginaw, MI	31.2	31.0
2005	Sidney, MT	33.1	32.3
2005	Scottsbluff, NE	29.9	36.9

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2005	Prosper, ND	12.1	10.2
2005	Freeville, NY	26.9	26.3
2005	Othello, WA	47.2	46.4
	Mean	<b>26.8</b>	<b>25.1</b>
	Paired T Test	t-statistic =	<b>2.01</b>
	(Probability)		<b>0.031,560</b>

### Biomass

Above ground biomass yield (lb per acre ) is a physiological component of yield (D.H. Wallace et al. 1993. Improving Efficiency of Breeding for Higher Crop Yield. Theoretical and Applied Genetics 86: 27-40) . The above ground biomass was measured by weighing the above ground stems, branches, pods and seeds and recording at 12 % moisture. This was done at harvest, just before threshing the seeds out. Experimental lines with high above ground biomass may have improved roots and nutrient transport systems.

N128420 (Seabiskit) showed greater biomass than Seahawk. Data on seed size (g/100) below was collected over two years (2005, 2006) at 2 locations. All data is from the work of the Cooperative Dry Bean Nursery managed by the USDA-ARS in Pullman WA (Dr. An Hang). N128420 (Seabiskit) averaged 6458 lbs /acre over the 4 location / years, whereas Seahawk averaged 6026 lbs /acre. A paired T-Test conducted on this data confirms that the difference in average values for N128420 (Seabiskit) and Seahawk is significant.

Year	Location	N128420 (SEABISKIT) Lb / acre	SEAHAWK Lb / acre
2005	Freeville, NY	4662	4332
2005	Othello, WA	8800	8159
2006	Freeville, NY	4736	4250
2006	Othello, WA	7634	7365
	Mean	<b>6458</b>	<b>6026</b>
	Paired T Test	t-statistic =	<b>5.179</b>
	(Probability)		<b>0.006,986</b>

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### Yield Stability Under Imposed Drought

Water is an input for growers in irrigated environments. Water can also be limiting in rain-fed environments. The yield stability under imposed drought displayed by N128420 (Seabiskit) shows that it may have improved water use efficiency.

Yield data (lbs / acre) was collected over two years (2005, 2006) at one location with two environments. Two environments were imposed by the University of Idaho at the Parma location in each year. One replicated trial was conducted with optimum irrigation. A second replicated trial was conducted with restricted irrigation causing imposed drought. All data is from the work of the Cooperative Dry Bean Nursery managed by the USDA-ARS in Pullman WA (Dr. An Hang). N128420 (Seabiskit) averaged 2331 lbs /acre over the 4 environments, whereas Seahawk averaged 1928 lbs /acre. A paired T-Test conducted on this data confirms that the difference in average values for N128420 (Seabiskit) and Seahawk is significant.

<b>Year</b>	<b>Environment</b>	<b>N128420 (SEABISKIT) Lb / acre</b>	<b>SEAHAWK Lb / acre</b>
2005	Parma, ID	2395	1688
2005	Drought-Parma, ID	1242	864
2006	Parma, ID	2917	2673
2006	Drought-Parma, ID	2770	2488
	<b>Mean</b>	<b>2331</b>	<b>1928</b>
	<b>Paired T Test</b>	<b>t-statistic =</b>	<b>3.823</b>
	<b>(Probability)</b>		<b>0.016</b>

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER N128420	3. VARIETY NAME Seabiskit
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 4666 East Faries Parkway Decatur, IL 62526	5. TELEPHONE (Include area code) (217) 541-2777	6. FAX (Include area code) (217) 424-6196
7. PVPO NUMBER 200600056		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☒ YES ☐ NO10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

**PLEASE NOTE:**

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

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**U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705**

**EXHIBIT F  
DECLARATION REGARDING DEPOSIT**

<b>NAME OF OWNER (S)</b>  Archer-Daniels-Midland Company	<b>ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country)</b>  4666 East Faries Parkway Decatur, IL 62526	<b>TEMPORARY OR EXPERIMENTAL DESIGNATION</b>  NI28420  <b>VARIETY NAME</b> Seabiskit
<b>NAME OF OWNER REPRESENTATIVE (S)</b>  Andrew F. Nilles	<b>ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country)</b>  4666 East Faries Parkway Decatur, IL 62526	<div style="background-color: #cccccc; padding: 5px; text-align: center;">FOR OFFICIAL USE ONLY</div> <b>PVPO NUMBER</b> <div style="font-size: 1.5em; font-weight: bold;">200600056</div>

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Andrew F. Nilles  
Signature

1-5-06  
Date